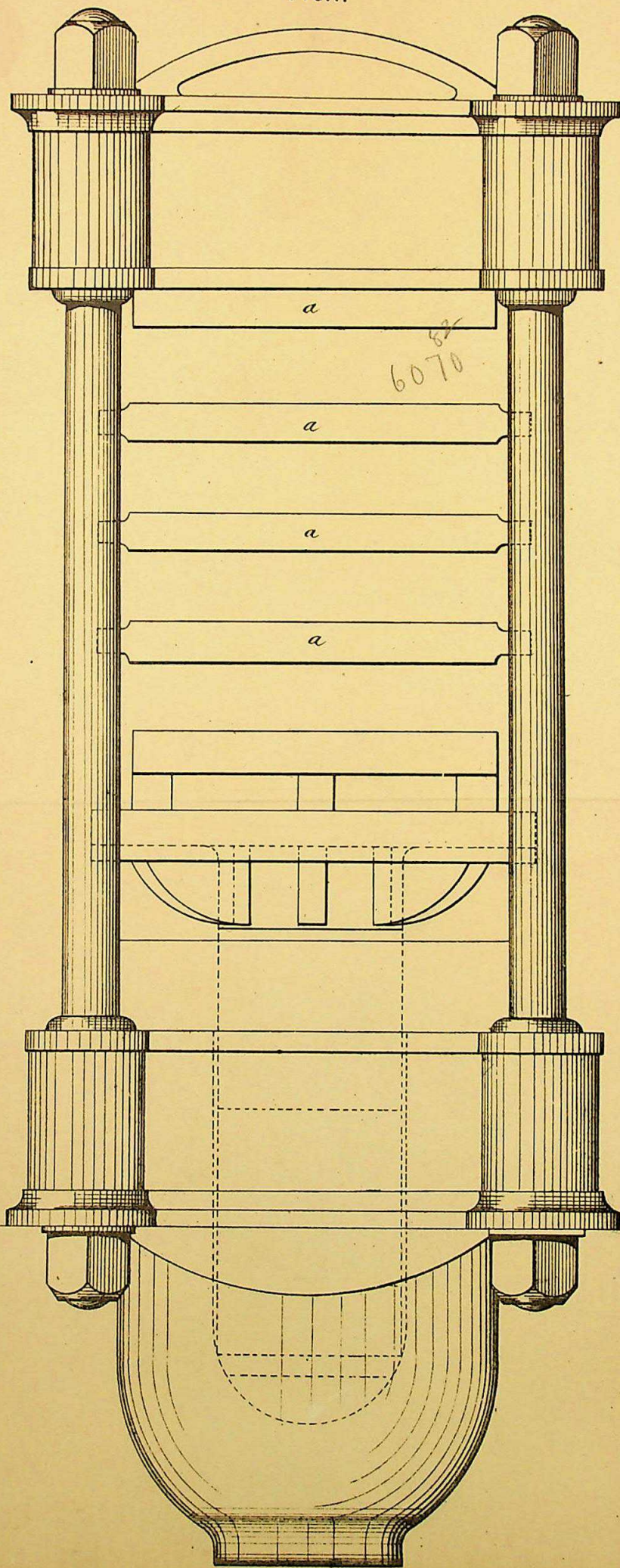


FIG. 1.



6070
(2 SHEETS)
SHEET 1

6070

8

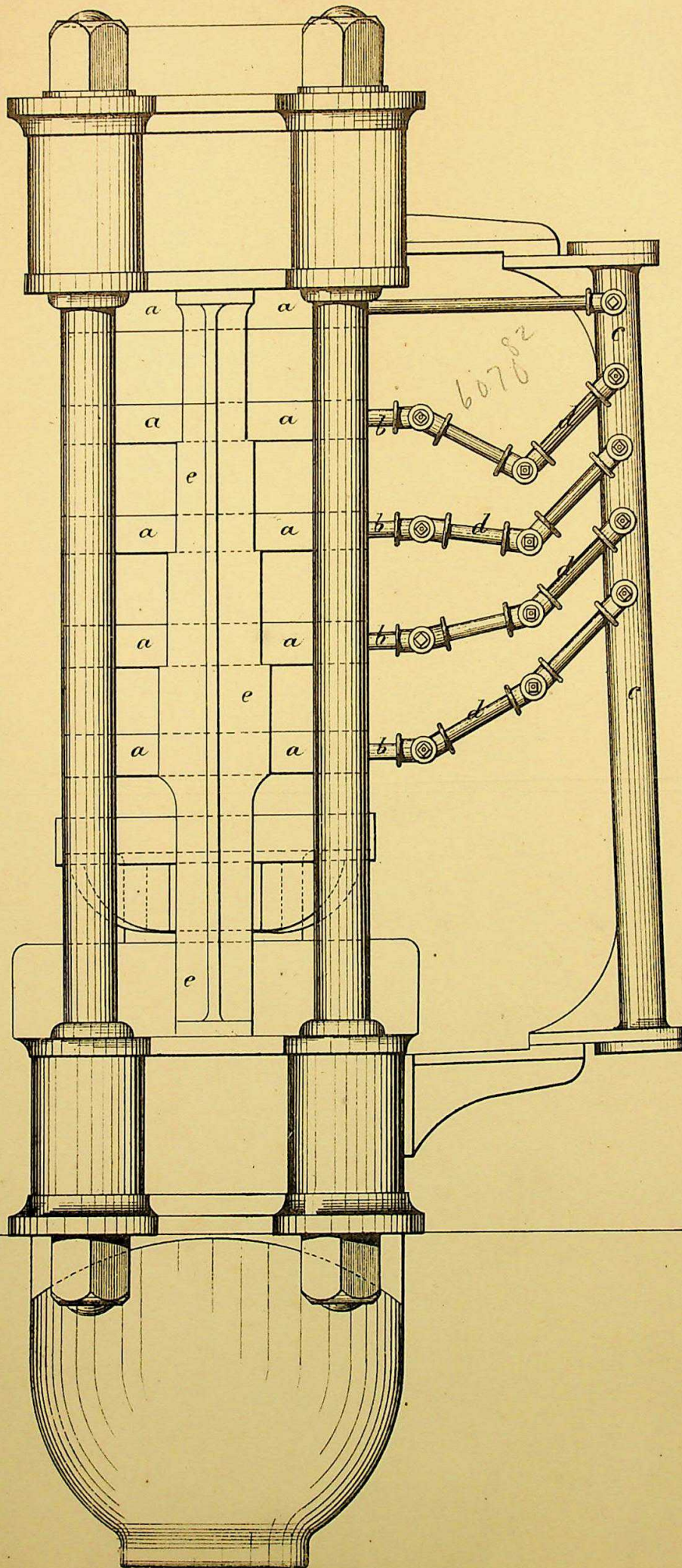
*press for forming
ture of Combs*

FIG. 2.

2

6070
12 SHEETS
SHEET 2.

*Press for
forming & hoop in
making combs*



146
17

A.D. 1882, 20th DECEMBER. N° 6070.

**Pressing of Horns and Hoofs to be Used in the Manufacture of
Combs and other Articles, &c.**

LETTERS PATENT to David Stewart of the City and County of Aberdeen
North Britain, Master of Arts for an Invention of "IMPROVEMENTS IN THE
PRESSING OF HORNS AND HOOFS TO BE USED IN THE MANUFACTURE OF
COMBS AND OTHER ARTICLES AND IN THE MEANS EMPLOYED THEREFOR"

PROVISIONAL SPECIFICATION left by the said David Stewart at the Office
of the Commissioners of Patents on the 20th December 1882.

DAVID STEWART of the City and County of Aberdeen, North Britain, Master of
Arts "IMPROVEMENTS IN THE PRESSING OF HORNS AND HOOFS TO BE USED IN
5 THE MANUFACTURE OF COMBS AND OTHER ARTICLES AND IN THE MEANS EMPLOYED
THEREFOR"

This Invention which relates to Improvements in the pressing of horns and hoofs
used in the manufacture of combs and other articles and in the means employed
therefor is a development of the Invention for which Letters Patent N° 2031,
10 A.D. 1881 have been already granted to the said David Stewart.

The present improvements relate more especially to the plates between which
the horns and hoofs are situated in the hydraulic press employed for pressing the
said horns and hoofs and this part of the Improvements consists in constructing
those portions of the plates above and below the hollow space through which, the
15 steam for heating the same and water for cooling the same pass, of much greater
thickness than hitherto so as to resist the increased pressure to which such plates
are subjected and of highly polished steel or other metal.—The said improved plates
are provided with inlets and outlets for the steam and water.—A vertical pipe is
arranged in the neighborhood of the hydraulic press connected both to a steam
20 generator and to a water reservoir or source of supply whilst jointed or flexible
pipes are provided for the purpose of connecting each improved hollow plate with
the aforesaid vertical pipe.—The vertical pipe has in the conduits leading to it
both from the steam generator and the water supply valves for alternately turning
on and shutting off the steam and water according as the hoofs or horns are
25 subjected to heat for pressing or water for cooling them after being pressed into
shape.—Galleries, guides, and checks or their equivalents are provided for the
purpose of supporting the plates within the press during the time the Ram is
withdrawn.

Stewart's Impts. in Pressing Horns, &c. for the Manufacture of Combs, &c.

SPECIFICATION in pursuance of the conditions of the Letters Patent filed by the said David Stewart in the Great Seal Patent Office on the 19th June 1883.

DAVID STEWART, of the City and County of Aberdeen, North Britain, Master of Arts "IMPROVEMENTS IN THE PRESSING OF HORNS AND HOOFS TO BE USED IN THE MANUFACTURE OF COMBS AND OTHER ARTICLES AND IN THE MEANS EMPLOYED THEREFOR 5

My said Invention which relates to Improvements in the pressing of horns and hoofs used in the manufacture of combs and other articles and in the means employed therefor is a development of the Invention for which Letters Patent N° 2031, A.D. 1881. have been already granted to the said David Stewart. 10

The present improvements relate more especially to the plates between which the horns and hoofs are situated in the hydraulic press employed for pressing the said horns and hoofs and this part of the improvements consists in constructing those portions of the plates above and below the hollow space through which the steam for heating the same and water for cooling the same pass, of much greater thickness than hitherto so as to resist the increased pressure to which such plates are subjected, and whose surfaces are highly polished.—The said improved plates are provided with inlets and outlets for the steam and water.—One vertical pipe (or preferably two vertical pipes) is, (or are) arranged in the neighborhood of the hydraulic press connected one to a steam generator and to a water reservoir or source of supply and the other vertical pipe connected with a waste pipe or drain, whilst jointed or flexible pipes are provided for the purpose of connecting each improved hollow plate with the aforesaid vertical pipes.—The first mentioned vertical pipe has in the conduits leading to it both from the steam generator and the water supply, valves or cocks for alternately turning on and shutting off the steam and water according as the hoofs or horns are subjected to heat for pressing, or water for cooling them after being pressed into shape.—Galleries, guides and checks or their equivalents are provided for the purpose of supporting the plates within the press during the time the ram is withdrawn. 15 20 25 30

And in order that my said Invention may be properly understood, I now proceed more particularly to set forth the system, mode or manner in or under which the same is, or may be used, or practically carried into effect reference being had to the accompanying Drawings and to the letters and Figures marked thereon, that is to say:— 35

Figures 1, and 2, represent respectively in front elevation and side elevation a hydraulic press constructed according to and constituting a part of my present Invention.

According to these improvements I construct the plates *a*, between which the horns and hoops are situated in the hydraulic press during the time the said horns or hoops are being pressed with a hollow space into which steam for heating, or water for cooling these plates *a*, is admitted.—The upper and lower walls of these chambers I form of much greater thickness than hitherto so as to resist the increased pressure to which such plates *a*, are subjected and their outer faces are highly polished and they are either formed of steel or any other suitable metal.—The plates *a*, are each provided with an inlet *b*, and outlet (the outlet of which is not shewn on the accompanying drawings).—These inlets and outlets are provided for the passage of steam and water into and from the plates *a*.—The vertical pipe *c*, is fitted near the hydraulic press, and is connected both to a steam generator and to a water reservoir or source of supply (neither of these supplies are shewn on the 40 45 50

Stewart's Impts. in Pressing Horns, &c. for the Manufacture of Combs, &c.

- annexed Sheets of Drawings).—The jointed pipes *d*, which are constructed in any convenient manner are connected at their outer ends to the vertical pipe *c*, and at their inner ends to the plates *a*, and by virtue of the flexible joints of the said pipes *d*, the plates *a*, can be raised by the ram into any required position.—In the
- 5 conduits leading from the steam generator and the water supply to the vertical pipe *c*, there is fitted in each a suitably constructed valve or cock for alternately turning on and shutting off the steam and water, according as the horns or hoofs under treatment are subjected to heat for pressing or water for cooling them after they have been pressed into shape.—The vertical pipe with connections from the
- 10 plates *a*, and connections to the waste-pipe or drain, though not shewn on the accompanying Drawings is constructed and connected in a similar manner as described and shewn for the vertical pipe *c*.—The castings *e*, are provided to supply the necessary galleries, guides and checks for the purpose of supporting the plates *a*, during the time the pressure of the Ram is withdrawn from the same.
- 15 Having now described and particularly ascertained the nature of my said Invention and the system, mode or manner in or under which the same is or may be used or practically carried into effect, I would observe in conclusion that what I consider to be novel and original and therefore claim as the Invention secured to me by the hereinbefore in part recited Letters Patent is:—
- 20 First—For the pressing of horns or hoofs to be used in the manufacture of combs and other such articles, the press constructed according to what is and operating substantially as is hereinbefore described with reference to the accompanying Drawings consisting of the parts marked *a*, to *e*, (inclusive) or the mechanical equivalents of all or any of the said parts.
- 25 Second—The plates *a*, having highly polished surfaces as and for the purposes set forth.

In Witness Whereof I, the said David Stewart have hereunto set my hand and seal this Fourteenth day of June in the year of our Lord One thousand eight hundred and eighty-three.

30

DAVID STEWART (L.S.)

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For Her Majesty's Stationery Office.

1882.